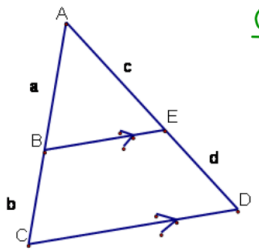
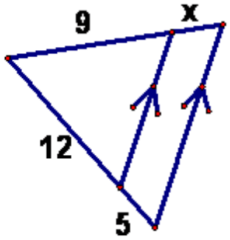
Ch 7 Test Friday!

7-5 Proportions and Similar Triangles

Theorem 7.4-Triangle Proportionality Theorem -If a line is parallel to one side of a triangle and intersects the other two sides, then it divides the two sides proportionally



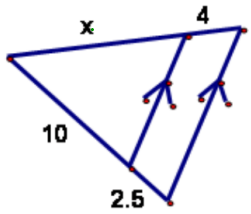
$\frac{a}{b} = \frac{c}{d}$



$\frac{12}{5} = \frac{9}{x}$

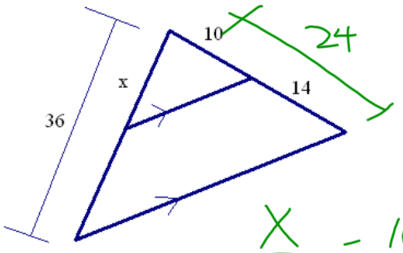
$12x = 45$

$x = 3.75$



$\frac{10}{x} = \frac{2.5}{4}$

$x = 16$



$\frac{X}{36} = \frac{10}{24}$

$X = 15$

$\frac{8}{3} = \frac{12}{X}$

$8x = 36$

$x = 4.5$

Parallel lines

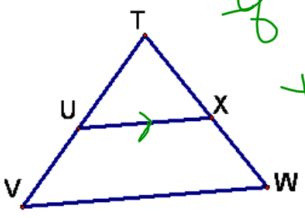
Use $\triangle$s

$\frac{y}{6} = \frac{11}{3}$

$y = 22$

Theorem 7.5-Converse of the triangle proportionality Theorem

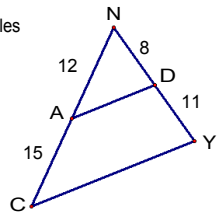
If a line divides two sides of a triangle proportionally, then the line is parallel to the third side.



If $\frac{TU}{UV} = \frac{TX}{XW}$

Then $\overline{UX} \parallel \overline{VW}$

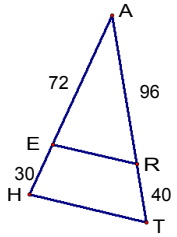
Examples



Is $\overline{AD} \parallel \overline{CY}$?

No

$\frac{12}{15} \stackrel{?}{=} \frac{8}{11}$

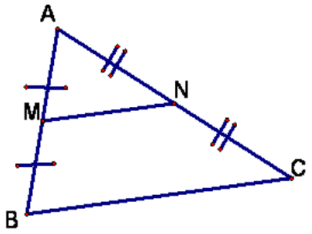


Is $\overline{ER} \parallel \overline{HT}$?

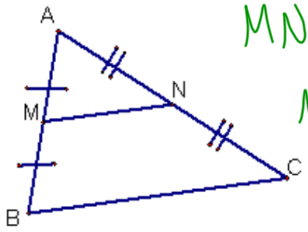
Yes

$\frac{72}{30} \stackrel{?}{=} \frac{96}{40}$

Midsegment -of a triangle is a segment whose endpoints are the midpoints of two sides of a triangle.

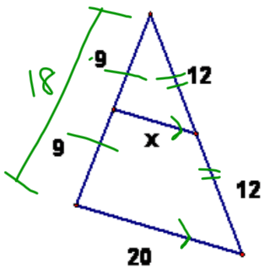


Theorem 7.6-Triangle Midsegment theorem -A midsegment of a triangle is parallel to one side of the triangle, and its length is ½ the length of that side.



$\overline{MN} \parallel \overline{BC}$

$MN = \frac{1}{2}BC$

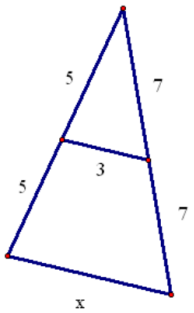


$x = \frac{1}{2}20$

$x = 10$

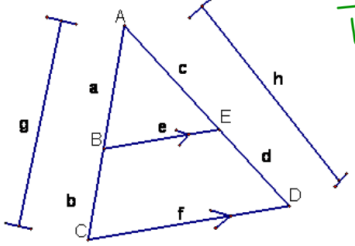
$\frac{x}{20} = \frac{9}{18}$

$x = 10$



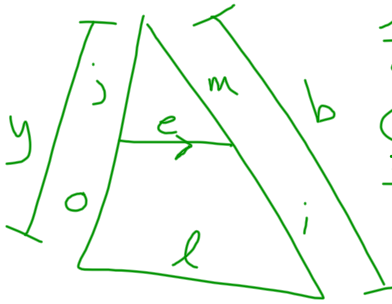
$3 = \frac{1}{2}x$

$6 = x$



$\frac{a}{b} = \frac{c}{d}$

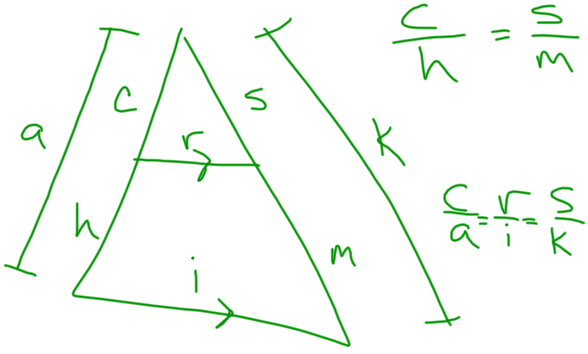
$\frac{e}{f} = \frac{a}{g} = \frac{c}{h}$



$\frac{y}{o} = \frac{m}{i}$

Δs

$\frac{j}{y} = \frac{e}{l} = \frac{m}{b}$



$\frac{c}{h} = \frac{s}{m}$

$\frac{c}{a} = \frac{r}{i} = \frac{s}{k}$

HW

p390-392

3-9, 14-16, 19, 24-26